

**UTRICULARIA BEAUGLEHOLEI (LENTIBULARIACEAE: SUBGENUS
UTRICULARIA: SECTION PLEIOCHASIA), A NEW SPECIES FROM
SOUTH-EASTERN AUSTRALIA**

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ABSTRACT

Gassin, Robert J. *Utricularia beaugleholei* (Lentibulariaceae: subgenus *Utricularia*: section *Pleiochasia*), a new species from South-eastern Australia. *Muelleria* **8(1): 37–42 (1993)**. — *Utricularia beaugleholei* R.J. Gassin *sp. nov.* is described as new, its distribution and habitat are discussed and differences with the related *Utricularia dichotoma* Labill. are highlighted.

INTRODUCTION

The first known collection of *Utricularia beaugleholei* was made in 1852 by *F. Mueller* (MEL 89973) in Brighton, now a suburb of Melbourne. Several more collections have been made since, especially during the last two decades by A.C. Beauglehole, who like previous collectors wrongly recognised them as *U. dichotoma* Labill. However Beauglehole was aware of there being two similar but distinct species and many of his numerous collections of *U. dichotoma* are also wrongly labelled *U. uniflora* R. Br. Taylor (1989) referring to *U. dichotoma* noted that 'very large flowers sometimes occur in the eastern states and these are not always associated with large or tall plants'. It seems likely that he was referring to *U. beaugleholei*. Interestingly, Taylor on examining collections of MEL for *Flora of Australia* recognised Beauglehole's mistake in confusing *U. dichotoma* for *U. uniflora* but did not recognise his other mistake.

On a recent fieldtrip, I was fortunate to find and examine live material of both *U. dichotoma* and *U. beaugleholei*. This revealed several taxonomically significant differences. This opportunity is taken of describing *U. beaugleholei* and of highlighting differences with *U. dichotoma*.

TAXONOMY

Utricularia beaugleholei R.J. Gassin *sp. nov.*

Utricularia dichotoma Labill. affinis, foliis lanceolatis anguste valde vel linearis anguste, ad 44 mm longis, 1.6 mm latis, apice acuto valde; appendiculis dorsalis laequei longioris laequeo saepe; marginibus supero partis labello supero corollae reflexis, labello infero corollae 4–11 elevatis leviter cristis luteis radiatim, et palato glabro centro marginalibus lateralibus pubescentibus differt.

HOLOTYPE: Victoria: 8 km NNE of Strathmerton near site of Mywee railway station in the Murray Valley, 30 Sep. 1978, *T.B. Muir 5322* (MEL).

Small, probably perennial terrestrial *herb*. *Rhizoids* numerous, capillary, simple, c. 2 cm long, tapering from 0.5 mm to 0.1 mm thick. *Stolons* few, capillary branched up to several centimetres long, the internodes less than 2 centimetres. *Leaves* 1-nerved, a few rosulate at the peduncle base, others in pairs at the stolon nodes, petiolate, lamina very narrowly lanceolate to narrowly linear, up to 44 mm long and 1.6 mm wide, tapering to a very acute apex. *Traps* few at the peduncle base, others in pairs at the stolon nodes, ovoid or globose, 1–4 mm long, stalk 10 mm or less, mouth lateral with a subulate simple dorsal appendage often longer than the trap, a pair of well developed, deeply fimbriate lateral appendages up to 2.5 mm long, and a pair of deeply fimbriate ventral appendages, usually poorly developed or absent proximally (near the stalk) and widest distally (near the

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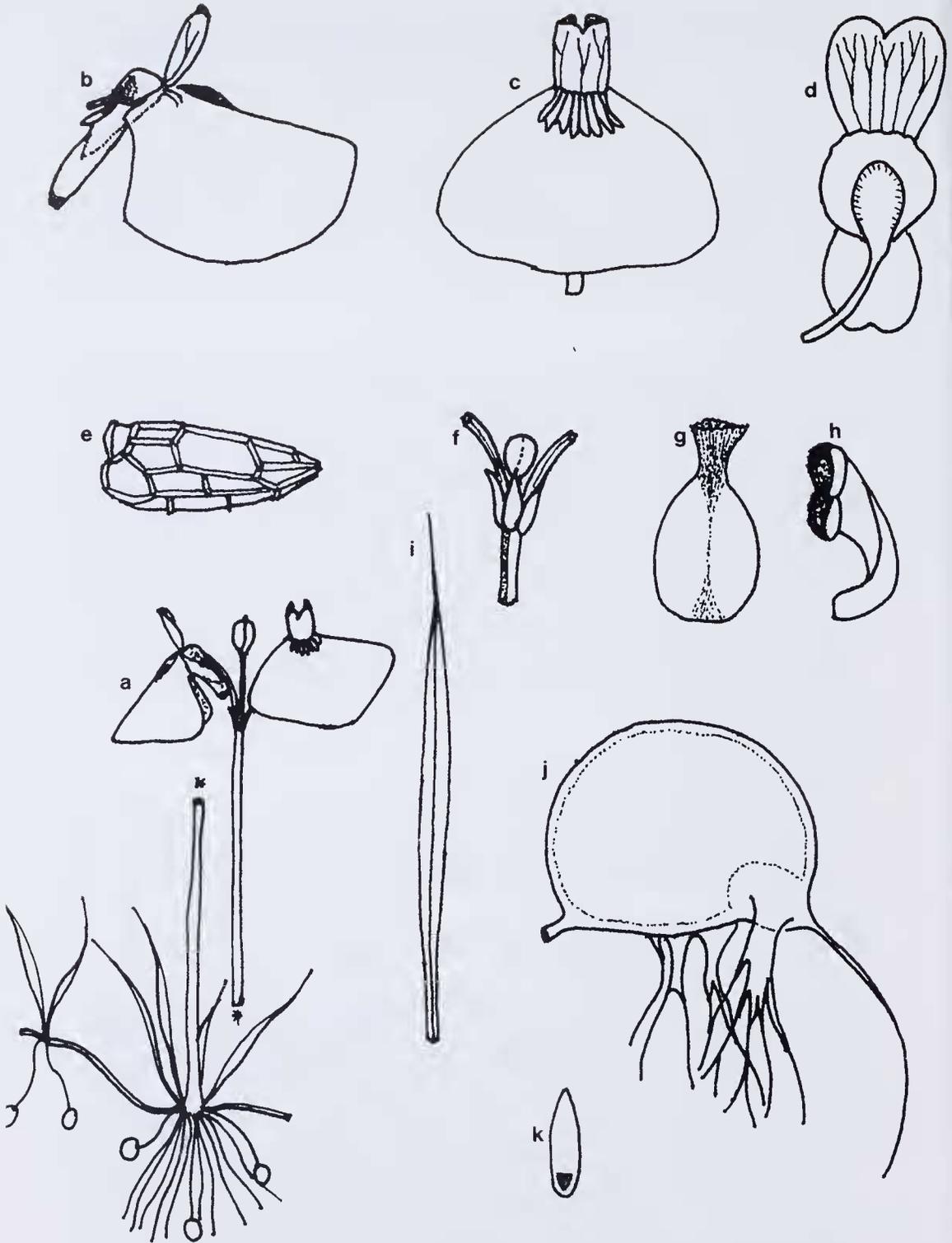


Fig. 1. *Utricularia beagleholei*. a — habit $\times 1$. b — flower, lateral view $\times 2.5$. c — flower, anterior view $\times 2.5$. d — calyx and upper corolla lobe $\times 5$. e — seed $\times 44$. f — bracts and bracteoles in situ $\times 3$. g — pistil $\times 14$. h — stamen $\times 14$. i — leaf $\times 3$. j — trap, lateral view $\times 14$. k — bract $\times 6$. a, d–k drawn from R.J. Gassin 23 (MEL); b, c drawn from S.J. Forbes 1875 & N.H. Scarlett (MEL).

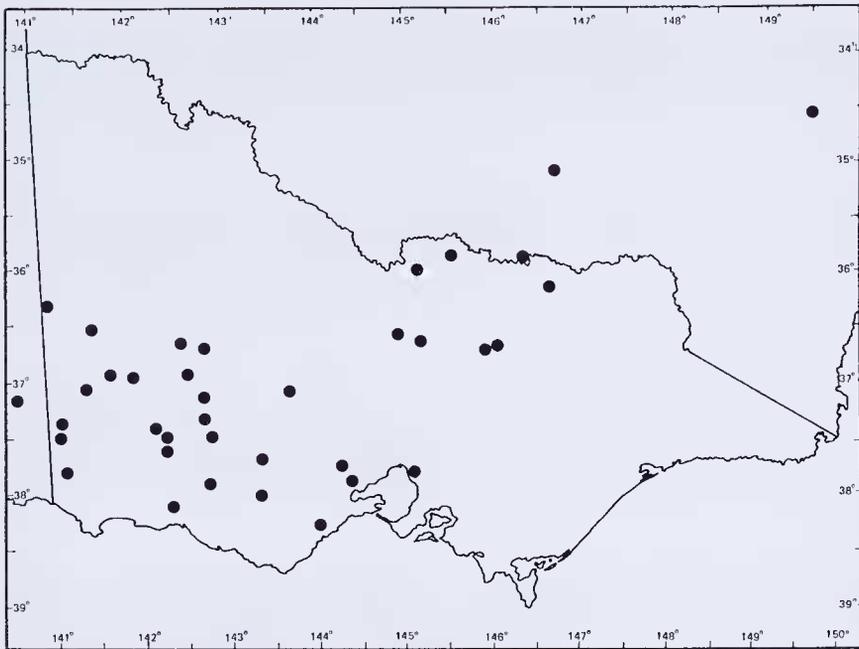


Fig. 2. Known distribution of *Utricularia beaugleholei*.

mouth), up to 2 mm long but sometimes absent. *Inflorescence* erect, solitary or several arising together or in succession, 4–35 cm long, peduncles terete, glabrous 0.8–2.0 mm thick. *Scales* absent. *Bracts and bracteoles* similar, basifixed, 2.0–3.5 mm long, 0.8–1.6 mm wide, base either absent or slightly gibbous, the superior part oblong or ovate, the apex acute. *Flowers* single, in opposite pairs or whorls of 3, terminal or at 2 or more nodes along the raceme axis; pedicels erect, filiform, distinctly dorsiventrally compressed, 0.25–1.5 cm long. *Calyx* lobes unequal, upper lobe circular or broadly ovate 2.5–4.5 mm long, lower lobe ovate or broadly ovate with apex emarginate to distinctly bifid 2.5–4.5 mm long, margins of both lobes wavy. *Corolla* dark violet with yellow markings at the base of the lower lip; upper lip erect with conspicuous vertical darker violet nerves, constricted near the middle, the superior part obcordate or broadly obovate with the apex emarginate, the lateral margin reflexed at 90° or more, 3.5–6.0 mm long, 3.0–6.0 mm wide, the lower part broadly semicircular and heavily pubescent on the abaxial surface, lower lip limb broadly hachet-shaped to reniform, 0.8–1.5 cm long, 1.4–2.7 cm wide, the base with 4–11 slightly raised radiating yellow ridges, the apex rounded or shallowly 3-lobed; palate glabrous centrally lateral margins pubescent; spur elliptic in cross section with apex distinctly bilobed, shorter than and broadly divergent from the lower lip. *Filaments* curved, 2 mm long, the anther theca distinct. *Ovary* superior, ovoid, style short. *Capsule* globose, 3–5 mm in diameter, the wall membranous, dehiscing by a single longitudinal, ventral, marginally thickened slit. *Seeds* narrowly obovoid c. 0.8 mm long. (Fig. 1)

DISTRIBUTION (Fig. 2)

Scattered throughout south west Victoria from the South Australia border to Port Phillip Bay, south of latitude 36°20'S. Also from the Murray Valley, north-east Victoria and the adjacent part of New South Wales between latitudes 35°S and

35°50'S and longitudes 144°50'E and 146°50'E. A single collection by *F. Mueller* (MEL 89873) from Goulburn in New South Wales marks the most northerly and easterly limits of its range. It has also been recorded from the Mary Seymour Conservation Park (37°10'S, 140°47'E) in the south-eastern corner of South Australia (Allen Lowrie pers. comm.)

HABITAT

Utricularia beaugleholei is found in wet sandy and clayey soils, often on the margin of swamps but also in roadside drains and on seasonally wet flood plains, usually in open grassland.

It has been collected in flower between September and March.

REPRESENTATIVE SPECIMENS (total number examined 41)

Victoria — 4.25 miles WSW of Dergholm PO, 14 Dec. 1971, *A.C. Beauglehole* 38062 (A, BRI, CANB, DNA, MEL, NSM); Little Desert, 15 km W of Broughton Waterhole, 9 Nov. 1979, *A.C. Beauglehole* 66348 (BA, CBG, MEL, NSM); Coolinda 24 km WNW of Stawell PO, 22 Oct. 1979, *A.C. Beauglehole* 65113 (MEL); Deep Lead Flora & Fauna Reserve, 7 Oct. 1981, *A.C. Beauglehole* 96124 & *W. McPhee* (MEL); 10 km NNW of Anglesea PO, 16 Jan. 1979, *A.C. Beauglehole* 63333 (MEL); 12.5 miles WSW of Casterton PO 21 Dec. 1971, *A.C. Beauglehole* 238112 (MEL).

DISCUSSION

Although very variable in size, the morphology of *Utricularia beaugleholei* is relatively constant. This species has previously been confused with *U. dichotoma* and indeed many of its characteristics are shared by some populations of the latter species. However, the combination of characteristics outlined above are unique to *U. beaugleholei*. Furthermore a number of mixed collections of both species exist [*W.T. Whan* (MEL 89970), *F. Mueller* (MEL 89973), *St Eloy D'Alton* 16 (MEL)] suggesting mixed populations occur in nature. In these, the two species remain readily differentiated.

Some of the differentiating characteristics between the two species are discussed below.

The most striking differences are to be found in the corolla lips. Whereas in *U. dichotoma*, the upper lip is flat and only protudes a small distance above the lower lip palate, in *U. beaugleholei* it is larger, reflexed at 90° or more, and protudes several mm above the palate. Its emarginate or bilobed apex is also more pronounced and a more constant characteristic than in *U. dichotoma*.

The lower corolla lip of *U. beaugleholei* differs from that of *U. dichotoma* in several respects. The palate of the former species is glabrous apart from its lateral margins whereas in the latter it is pubescent. The distribution of the ridges arising

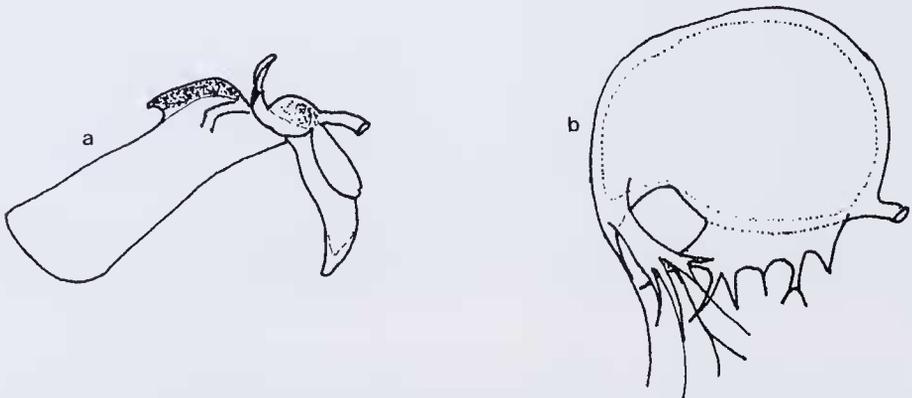


Fig. 3. *Utricularia dichotoma*. a — flower, lateral view $\times 2.0$. b — trap, lateral view $\times 11$. a drawn from *T.B. Muir* 4792 (MEL); b drawn from *T.B. Muir* 4813 (MEL).

from the anterior aspect of the palate provides the easiest means of differentiating between the two species. In *U. dichotoma* three sets of ridges arise from the palate, these are markedly elevated above the remainder of the limb (Fig. 3a). A central pair protrudes forward over the centre of the limb, and 2 smaller lateral sets each comprising two or more ridges are at approximately 45° to the central pair. A further small ridge sometimes arises between the apices of the 2 central ridges. The central 2 (or 3) ridges are yellow (rarely brown) and the lateral ridges either yellow or purple, there being a maximum of 7 yellow stripes. In *U. beaugleholei* 4 to 10 ridges arise from the palate, these are only slightly raised above the remainder of the limb. In contrast to *U. dichotoma*, the ridges are equidistant from each other and diverge slightly as they extend from the palate. As in *U. dichotoma* a further small ridge is often present between the 2 central ridges. In this species, the ridges are always yellow giving a maximum of 11 yellow stripes.

In both species, the flowers can be terminal or clustered at 2, 3 or rarely more nodes. Whereas in *U. beaugleholei* flowers in the lower and subsequent nodes are often in whorls of 3, this arrangement is very rare in *U. dichotoma*. Examination of specimens from over 100 collections of this species has revealed very few specimens with the lower clusters of flowers in a whorl of 3 and none with that arrangement in subsequent nodes, the flowers being either single or in opposite pairs.

In *U. beaugleholei*, the bracts are always basifixed sometimes with a slightly gibbous base whereas in *U. dichotoma* they are more commonly basisolute. However, when basifixed they are indistinguishable from those of *U. beaugleholei*.

Whereas the leaf shape of *U. dichotoma* is very variable, ranging from narrowly linear to broadly elliptic and the apex rounded to acute, the leaf shape of *U. beaugleholei* varies only very slightly being either very narrowly lanceolate or narrowly linear always tapering to a very acute apex. Observations by myself and others have revealed that the linear leaf-shape of some populations of *U. dichotoma* is a result of growing in shallow water, the leaf becoming broader and shorter when the same plants are grown in drier soils. Unfortunately, similar observations have not been made for *U. beaugleholei* but the fact that the leaf shape of collected specimens shows so little variation would suggest that growing conditions are not crucial in determining leaf shape although they could account for variation in leaf size.

The morphology of the trap appendages is also helpful in differentiating the two species. The dorsal appendage of the *U. beaugleholei* trap is usually long, often longer than the trap, although this condition is uncommon in *U. dichotoma*, it does occur. The lateral appendages of the *U. beaugleholei* trap are much longer and more deeply fimbriate than those of *U. dichotoma*. However, the most obvious difference is in the ventral appendages. In *U. dichotoma*, (Fig. 3b) when present these are wide, marginally entire or shortly fimbriate, and of constant width throughout their length, whereas in *U. beaugleholei* when present they are usually more deeply fimbriate and usually widest distally and sometimes very poorly developed or absent proximally.

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